

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

1.9
En 324
CURRENT LITERATURE
IN
AGRICULTURAL ENGINEERING

LIBRARY
RECEIVED
SEP 13 1936
U. S. Department of Agriculture

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF AGRICULTURAL ENGINEERING

Vol. 6, No. 2.

WASHINGTON, D. C.

September, 1936.

Accidents.

Lecture and group discussion course on home and farm accident prevention.
Washington, D.C. American National Red Cross, 1936.

Agricultural Products.

Colloid chemistry of cellulosic materials. By Alfred J. Stamm. Washington, D.C. 1936. 91 p. U.S. Department of Agriculture. Miscellaneous Publication no. 240.

Dreams and acres. By Ben Hibbs. Country Gentleman. v. 106, no. 5. May, 1936. p. 5-6, 71-74.

Lanital - The Italian artificial wool. By J.A. deTomasi. Milk Plant Monthly. v. 25, no. 8. August, 1936. p. 36-37. Casein is precipitated from skimmilk with sulfuric acid, separated and washed. After centrifugation and partial drying, it is again put into solution with alkali, its viscosity is adjusted, and it is ripened and then squeezed through fine nozzle. The issuing fine strand passes through acid and condensing bath, is washed and finally dried. In this condition it is suitable for any of standard treatments to which all textile fibers may be submitted, like dying, spinning, weaving, etc.

More about lanital. By Prof. Georges Ray. Milk Plant Monthly. v. 25, no. 8. August, 1936. p. 38, 40.

Profits follow the pendulum of change. By Ralph L. Woods. Magazine of Wall Street. v. 58, no. 6. July 4, 1936. p. 352-353, 380-381. Challenge of new industrial competition.

Agriculture.

Agricultural adjustment, 1933 to 1935. A report of administration of the Agricultural Adjustment Act, May 12, 1933, to December 31, 1935. Washington, Agricultural Adjustment Administration, 1936. 321 p.

Agricultural loans of commercial banks. By Norman J. Wall. 1936. 56 p. U.S. Department of Agriculture. Technical bulletin no. 521.

Agricultural preparedness and the drought. By Henry A. Wallace. Washington, 1936. 15 p. mimeographed. Address before the International Baby Chick Association, at Kansas City, Mo., July 22, 1936.

Agricultural statistics, 1936. U.S. Department of Agriculture, Washington, D.C. 1936. 421 p.

Agriculture. (Cont'd)

Choice of crops for saline land. By T.H. Kearney and C.S. Scofield. 1936. 24 p. U.S. Department of Agriculture. Circular no. 104.

Cooperation in agriculture: A selected and annotated bibliography with special reference to marketing, purchasing and credit. Compiled by Chastina Gardner. Washington, D.C., 1936. 214 p. U.S. Farm Credit Administration. Bulletin no. 4.

Cooperative farm mortgage credit, 1916-1936. Farm Credit Administration. Washington, D.C. 1936. 24 p.

Farm program essentials. By H.R. Tolley. 1936. 12 p. mimeographed. Address at the West Tennessee Farmers' and Home Makers Institute, Jackson, Tenn., July 29, 1936.

Farm problems and farm policies. By H.R. Tolley. 1936. 12 p. mimeographed. Address before the Annual Farmers' Short Course at College Station, Texas, July 24, 1936.

Farm trends in Washington counties in 1936. Summarized by R.M. Turner and H.B. Carroll. 1936. 23 p. Washington State College Extension Service Bulletin no. 228.

Reports for states with statistics for counties and a summary for the United States: farms, farm acreage and value, and selected livestock and crops. Prepared under the supervision of Z.R. Pettet. Washington, 1936. 951 p. U.S. Census of Agriculture: 1935. v. 1.

Statistics of farmers' cooperative business organizations, 1920-1935. By R.H. Elsworth. Washington, D.C., 1936. 129 p. U.S. Farm Credit Administration. Bulletin no. 6.

Air Conditioning.

Description of home-made air coolers. By L.H. Mitchell. Reclamation Era. v. 26, no. 8. August, 1936. p. 196. Air cooler is made of wooden box made to fit tightly in lower half of window, bit of excelsior, tin trough perforated to spread water through moistened excelsior and in doing so lowers its temperature. Temperature of room can be lowered 10 or 15 degrees with one of these home-made air coolers. Gives cross section.

Filtering in air conditioning. Refrigerating Engineering. v. 31, no. 6. June, 1936. p. 362-365. Second paper on air pollution and cleaning.

Progress in air conditioning in the last quarter century. By W.H. Carrier. Heating, Piping and Air Conditioning. v. 8, no. 8. August, 1936. p. 447-459.

Air Conditioning. (Cont'd)

Room control with air-conditioning. By F. Crawford. Fuel Oil Journal. v. 15, no. 2. August, 1936. p. 30, 83-84.

Alcohol Fuel.

Proceedings of the second Dearborn conference of Agriculture, Industry and Science, Dearborn, Michigan, May 12, 13, 14, 1936. 1936. 409 p. Power Alcohol. p. 73-138. "Gasoline and Alcohol-Gasoline Blends." Dr. Leo M. Christensen and Dr. L.T. Brown. p. 398-403.

Cotton.

Care and maintenance of cotton-gin and ribs. By Charles A. Bennett and Francis L. Gerdes. 1936. 20 p. U.S. Department of Agriculture. Circular no. 393.

Cotton production in the United States, crop of 1935. Prepared under the supervision of Harvey J. Zimmerman. Washington U.S. Bureau of the Census, 1936. 38 p.

Effect of artificially drying seed cotton before ginning on certain quality elements of the lint and seed and on the operation on the gin stand. By Francis L. Gerdes and Charles A. Bennett. 1936. 62 p. U.S. Department of Agriculture. Technical bulletin no. 508.

Results of the regulation of cotton gins as public utilities in Oklahoma. By Roy A. Ballinger. 1936. 16 p. Oklahoma Agricultural Experiment Station Bulletin no. 230.

Vertical drier for seed cotton. By Charles A. Bennett and Francis L. Gerdes. 1936. 22 p. U.S. Department of Agriculture. Miscellaneous publication no. 239.

Dehydrators.

Brown type multistage walnut dehydrator. By B.D. Moses. Agricultural Engineering. v. 17, no. 7. July, 1936. p. 297-298.

Dehydrators. By George H. Clark. Refrigerating Engineering. v. 31, no. 6. June, 1936. p. 366, 384.

Diesel Engines.

Modern diesel engine practice. By Orville Adams. New York. Norman W. Henley Publishing Co., 1931. 658 p. Comprehensive treatise for the student and practical engineer covering fully all types of diesel engines, their operating principles, their numerous modern commercial, automotive and industrial applications, methods of installation; operating costs; types best suited for various tasks and rules for repair and maintenance. Based on the experience of the leading diesel engine manufacturers, engineers

Diesel Engines. (Cont'd)

and experts on servicing and operation. Contains a very complete discussion of modern high speed diesel engine construction, including light weight aircraft and automotive types.

Drainage.

Drainage laws of the state of Illinois: in force July 1, 1935. Compiled by Edward J. Hughes. Printed by authority of the State of Illinois, Springfield, Ill., 1935. 254 p.

Report of the Third Inter-State Conference on the Red River of the North drainage basin sponsored by the state planning boards of Minnesota, North Dakota and South Dakota. 1st revision, July 20, 1936. St. Paul, Minnesota, July 8th, 1936. 27 p. multigraphed.

Tables of drainage areas and river distances in the Mississippi River system. By Montrose W. Hayes. Washington, D.C. U.S. Weather Bureau, 1933. 26 p.

Electric Lines.

Line extension policies. By H.J. Gallagher. Agricultural Engineering. v. 17, no. 8. August, 1936. p. 337-338, 348.

Rural line specifications and costs. By E.J. Kallevang. C.R.E.A. News Letter. No. 13. August 1, 1936. p. 11-12.

Electric Wiring.

Farm wiring problem. By H.G. Knoderer. Bridgeport, Conn. General Electric Company, 1936. 27 p. Paper presented at the 30th annual meeting of American Society of Agricultural Engineers, Estes Park, Colorado, June 22nd to 25th, 1936.

Manual on the use of graded wiring systems, with "time-saver" specification tables to facilitate the work of architects. Bridgeport, Conn. General Electric Company, Merchandise Dept., 1935. 38 p.

Radial wiring system: reference manual for architects and engineers. Bridgeport, Connecticut. General Electric Company, 1936. 28 p.

Electricity-Distribution.

C.R.E.A. organized in Maryland. C.R.E.A. News Letter. No. 13. August 1, 1936. p. 12-15. Main objectives of Committee are as follows: 1. To further the extension and use of electricity, chiefly through cooperation with other agencies; 2. To act as guiding body in coordinating and carrying out of educational program; 3. To help arrange and put on farm electrification exhibits and demonstrations; 4. To promote better understanding between agencies and groups interested in Rural Electrification.

Electricity-Distribution. (Cont'd)

Cost of distribution of electricity. U.S. Federal Power Commission. Washington, 1936. 148 p. National Power Survey. Power series no. 3.

Electric light and power industry in 1935. New York, Edison Electric Institute, 1936. 38 p. Statistical bulletin no. 3, June 1936.

Summary of progress of rural electrification in Pennsylvania. January 1927 to October 1, 1935. By John M. McKeo. C.R.E.A. News Letter. No. 13. August 1, 1936. p. 15-16.

Electricity in the Home.

Selected list of references on electricity in the farm home. Prepared by Mary Rokahr. U.S. Department of Agriculture, Extension Service, 1936. 7 p. multigraphed. Miscellaneous Extension Publication no. 30.

Electricity on the Farm.

Burglar proofing the farm. By H.N. Colby. 1935. 15 p. New Hampshire University. Extension Service. Circular no. 171.

California uses electricity on a large scale. By C.W. Geiger. Electricity on the Farm. v. 9, no. 8. August, 1936. p. 14. Farmers in California use average of 15,540 kilowatt hours a year. In other sections of country the average is only 2,450 kilowatt hours, less than one-sixth as much.

Farm equipment costs vs. Kilowatt hour consumption. By D.B. Leonard. C.R.E.A. News Letter. No. 13. August 1, 1936. p. 18-19.

Home-made electric hay hoists. By Harry L. Garver. 1935. 3 p. State College of Washington. Extension Service. Extension Bulletin no. 206.

Improving dairy cows with ultra violet light. By C.C. Pink. Electricity on the Farm. v. 8, no. 10. October, 1935. p. 8-9.

National viewpoint in rural electrification. By W. T. Ackerman. C.R.E.A. News Letter. No. 13. August 1, 1936. p. 8-11.

Rural electrification activities of the Virginia Electric and Power Company in Virginia. By C.P. Spellman. C.R.E.A. News Letter. No. 13. August 1, 1936. p. 3-7.

Rural electrification in New Zealand. By Erwin Strauss. Rural Electrification News. v. 1, no. 11. July, 1936. p. 5-7.

Seed cleaning is a paying practice. By E.W. Lehmann. Electricity on the Farm. v. 9, no. 1. January, 1936. p. 16-17. It has been estimated that annual cost of weeds in America amounts to huge sum of three billion dollars. Weeds affect quality and cost of products,

Electricity on the Farm. (Cont'd)

and therefore indirectly affect every person. Average weed tax per farm on basis of above estimate is over \$450 - a part of this cost is paid by the general public. Farmers are paying their part of cost for growing weeds in greater cost of production, by purchase of additional equipment, by more cultivations, and reduced yields; they are paying, too, in poorer quality and lower prices of crops grown, and finally in reduced value of land itself.

Erosion Control.

Cost of soil erosion with control suggestions. By H.H. Bennett. Springfield, Illinois, Illinois Farmers' Institute, 1934-1935. 30 p.

Crop production in Northeastern New Mexico under severe soil-blown conditions. By John Carter, Jr. 1936. 15 p. New Mexico Agricultural Experiment Station Bulletin no. 243.

Cropping systems in relation to erosion control. By M.F. Miller. 1936. 35 p. Missouri Agricultural Experiment Station. Bulletin no. 366.

Direct method of aggregate analysis of soils and a study of the physical nature of erosion losses. By Robert E. Yoder. Journal of the American Society of Agronomy. v. 28, no. 5. May, 1936. p. 337-351.

Engineers come to rescue of eroded land. By Lawrence Skromme. Iowa Engineer. v. 36, no. 5. February, 1936. p. 78-79. Terracing methods are explained in this article.

Retaining dams check many gully erosion difficulties. By Lawrence Skromme. Iowa Engineer. v. 36, no. 6. March, 1936. p. 102-103.

Soil, the nation's basic heritage. Prepared by the Land Grant Colleges and Universities of the Tennessee Valley States cooperating with the U.S. Department of Agriculture and the Tennessee Valley Authority. Washington, D.C. 1936. 58 p.

Soil conservation - its place in national agricultural policy. U.S. Agricultural Adjustment Administration. Washington, D.C. 1936. 27 p. Effort to meet long-felt need for clear exposition of more important economic aspects of soil-conservation problem and their relation to other elements of national agricultural and industrial policy.

Vegetative control in soil conservation. By Ernest Carnes. Agricultural Engineering. v. 17, no. 8. August, 1936. p. 341-342.

Evaporation.

Graphical aid in the solution of Meyer's evaporation formula. By A.S. Levens. Engineering News-Record. v. 117, no. 6. August 6, 1936. p. 198.

Explosions.

Glidden soybean plant explosion. By David J. Price and Hylton R. Brown. 1936. 12 p. Boston, Mass., National Fire Protection Association.

Explosives.

Blasting gully banks with explosives. Wilmington, Delaware. E.I. Du Pont de Nemours & Co., Inc., 1936. 36 p. Description of methods employed to effect erosion control, construction of terraces and the accomplishment of reforestation and conservation projects.

Farm Machinery and Equipment.

Combine with low-cut bar saves soybeans. Furrow. v. 41. July-August, 1936. p. 12. According to Department of Agricultural Engineering of Ohio Experiment Station, bar cutting 4-1/2 inches from ground leaves nearly 5% of beans in field; when cutting 5-1/2 inches from ground, it misses 8% of beans, and when cutting 8-1/2 inches, loss of nearly 11% is suffered. To prevent these soybean losses, special low-cut bar that will cut as low as 1-1/2 inches from ground has been designed. It is built especially for soybean harvesting and works close to ground, over its entire width, in all field conditions.

Cost of operating farm equipment. By J.P. Hertel. Farm Economics. no. 96. June, 1936. p. 2342-2350.

Experience in stacking hay. By Wm. Gregory Moore. Pennsylvania Farmer. v. 115, no. 2. July 18, 1936. p. 15. Cheap, portable hay-stacking contrivance.

Farm equipment outlook favors continued expansion. New York, Brookmire Bulletins, Inc., 1936. 5 p. Brookmire Special Reports, June 16, 1936.

Fixing mower troubles. Western Farm Life. v. 38, no. 11. June 1, 1936. p. 9.

Home-made potato sorting table. By Harry L. Garver. 1936. 4 p. State College of Washington. Extension Service. Extension Bulletin no. 222.

Is the combine coming East? By M.C.G. Pennsylvania Farmer. v. 115, no. 3. August 1, 1936. p. 5, 14.

It simply rubs out the grain. By George F. Jordan. Missouri Ruralist. v. 77, no. 14. July 11, 1936. p. 13. Now advance in threshing cylinder design, necessitated by increasing use of combine in harvesting various crops, has brought on type of cylinder that rubs out grain rather than beating it out as is done by present day separator.

Farm Machinery & Equipment. (Cont'd)

J.I. Case features centennial tractor plow. Implement Record. v.33, no. 8. August, 1936. p. 20-21. One hundred years of steady progress since Major L. Andrus built the first Grand Detour plow.

Machines cut man hours in harvesting corn crop. By J. Brownlee Davidson. Furrow. v. 41. July-August, 1936. p. 3, 10.

Manufacture and sale of farm equipment and related products, 1935. Prepared under the supervision of Thomas J. Fitzgerald. Washington, Bureau of the Census, 1936. 16 p.

More about the B.A.E. telescoping wagon tongue. Farm Implement News. v. 57, no. 15. July 16, 1936. p. 30. Requires first a knowledge of mechanics, and second, well-equipped machine shop.

Oats threshed and straw baled in one operation. Implement and Tractor. v. 51, no. 16. August 8, 1936. p. 12, 45.

Potato washing investigations. By C.L. Vincent and H.L. Garver. 1936. 24 p. Washington Agricultural Experiment Station. Bulletin no. 332.

Scope of investigations on machine application of fertilizers, 1935. Joint Committee on Fertilizer Application. Washington, D.C. 1936. 3 p. multigraphed.

Small-grain nursery equipment. By Hubert M. Brown and J.W. Thayer, Jr. Journal of the American Society of Agronomy. v. 28, no. 5. May, 1936. p. 395-403. Changes in size, shape, arrangement, and replication of small plats have necessitated changes in methods used in planting, harvesting, and threshing of grain grown on such plats. Features of five machines now in use on plant breeding plats at East Lansing and developed under cooperative project between sections of Farm Crops and Agricultural Engineering of Michigan Agricultural Experiment Station are discussed in article with hope that they may be helpful to other workers. Whichever change has been made, it has been judged on basis of (1) maintenance of purity, that is, freedom from mechanical mixture; (2) simplicity of operation; (3) efficient use of man power; (4) simplicity of construction; and (5) increase in speed of operation. First requirement is most essential and its importance is recognized by all. Other requirements are making themselves felt more and more as experiments are becoming more extensive and refined and expense is becoming more of factor in planting, harvesting, and threshing.

Telescoping wagon tongue. By C.K. Shedd and E.V. Collins. Agricultural Engineering. v. 17, no. 8. August, 1936. p. 343-345. Use of telescoping wagon tongues is advantageous in following situations: 1. When wagons are being trailed short distances with tractor or truck and frequent coupling and uncoupling is necessary; 2. When it is necessary to pull wagon part of time by team and part of time by tractor or truck; 3. When it is desired to couple two or more

Farm Machinery & Equipment. (Cont'd)

wagons in train; 4. In any situation when it is desirable for tractor operator to couple up to loaded wagon without assistance.

To make your mower work better. By Ivan G. Morrison. American Agriculturist. v. 133, no. 13. June 20, 1936. p. 3. To work properly mower must have: 1. A cutter bar that is lined up properly; 2. Guards that are aligned; 3. Knives that are sharp and centered; 4. Knife clips that are tight.

Farm Structures - Repairs

Farmward trend spurred by repair program. By Roy A. Nelson. Hoard's Dairymen. v. 81, no. 10. May 25, 1936. p. 270.

Faulty construction repairs are costly to farm income. Utah Farmer. v. 56, no. 20. May 25, 1936. p. 7. Every year United States uses about twice as much timber as is grown in forests. From one-third to one-half of this timber is used yearly for repairs in homes and farm buildings and fullest efficiency and satisfaction to be had from use of wood for such repairs depends, in large part, up on wood selected and its proper use. To decrease repair bill requires that faulty construction be replaced by that of proper design and that surfaces exposed to weather, damp air, or condensation be coated with paint varnish, or other protective coatings, to reduce absorption of moisture. Protective coatings, however, reduce but do not prevent moisture absorption, and therefore cannot be relied upon to make up for poor drainage, poor ventilation, or poor construction.

Survey your farmsteads for repairs, additions and best arrangement. Farmer. v. 54, no. 11. May 23, 1936. p. 7, 30.

Feed Grinders and Grinding.

Bin method of feed mixing. By Hobart Beresford. Electricity on the Farm. v. 9, no. 3. March, 1936. p. 22. Bin method of feed mixing saves labor, requires very little attention and can be done at chore time.

Grinding corn for swine. By M.A. McCarty and others. 1936. 11 p. Pennsylvania. Agricultural Experiment Station. Bulletin no. 326.

Fertilizer.

Synthetic manure production in Michigan. By L.M. Turk. 1936. 11 p. Michigan Agricultural Experiment Station. Circular Bulletin no. 157.

Fills.

Hydraulic fill at Quabbin dike. Engineering News-Record. v. 116, no. 25. June 18, 1936. p. 882-886. Contractors plant for placement of 2,000,000 cubic yards of embankment for Boston water supply dam by full hydraulic method developed after careful study of three suggested plans offered by engineers.

Flax.

Fiber flax in Oregon. By Brittain B. Robinson. 1936. 12 p. Oregon Agricultural Experiment Station Circular no. 118.

Floods and Flood Control.

Agricultural engineers in upstream engineering; editorial. Agricultural Engineering. v. 17, no. 8. August, 1936. p. 324.

Conference on upstream engineering called. Agricultural Engineering. v. 17, no. 8. August, 1936. p. 352. To be held in Washington, D.C., September 22 and 23. Committee was recently appointed by President to organize Conference for announced purpose of coordinating engineering knowledge on subject with view to increasing effectiveness in saving soil and controlling floods.

Flood control program in Pennsylvania. Engineering News-Record. v. 117, no. 7. August 13, 1936. p. 250. Bill passed and signed by Governor, appropriates \$50,000 to meet expenses of survey which Department of Forests and Waters is directed to make. Survey is to cover various watersheds of state and is intended to determine what flood control works are necessary and possible. Report and recommendation are to be prepared before February, 1937. Other bill on which final action was taken is appropriation of \$32,000 for flood control work along Delaware River in Pike county. Bill has been passed by legislature, but not signed by Governor, which authorizes cities, boroughs, towns, and townships, separately or jointly, to construct flood control works, subject to provision that such works do not interfere with activities of existing state agencies. Bill, passed by House and now pending in Senate, defines powers and duties of water and power resources board of Department of Forests and Waters in relation to flood control. Board is empowered to set up flood control districts in state and, in behalf of such districts, to exercise power of eminent domain and to make assessments against property benefited in proportion to benefits. Board is also empowered to enter into compacts with other States for interstate flood control work. Appropriation of \$2,000,000 is provided in bill for such interstate works, and water and power resources board is empowered to spend money. Moreover, board is made agency of state to receive money from and cooperate with federal government in any flood control activities which may be undertaken by government within state. In this connection, board is given authority to exercise same powers of eminent domain and assessment which it is given in behalf of flood control districts. In negotiating with federal government, board may obligate commonwealth to pay portion of cost of federal flood control work. Included in this bill is provision for state operation of federal flood works.

Reports on proposed flood or flood-control investigations. July 22, 1936. Washington, D.C. National Resources Committee, Water Resources Committee, 1936. 49 p. multigraphed.

Floors.

Agricultural engineering worker develops new fireproof floor. Iowa Engineer. v. 36, no. 5. February, 1936. p. 92. Combination clay tile, concrete and steel. Material combines low cost with simplicity of construction and flexibility of installation. Special unit of construction consists of inverted T design which provides channels for concrete and steel reenforcement. Beam is constructed by laying number of individual sections end to end and filling channels with concrete reinforced with steel rods. When concrete has cured to provide sufficient strength for handling, joists are placed in much same manner as wood beams. To complete floor, fillers are laid between beams so that they rest on ledges. After filler tiles are in place, concrete floor is cast over entire unit.

Distribution of shearing stresses in concrete floor slabs under concentrated loads. By M.G. Spangler. 1936. 52 p. Iowa Engineering Experiment Station Bulletin no. 126. Purpose of research was to determine working values of effective width, by measuring distribution of shearing stresses induced by concentrated loads placed at various points on number of concrete floor slabs having various thicknesses, widths, and spans; and to formulate laws governing this distribution.

Flow of Water.

Floatation gradient for the flow of water through porous strata and its bearing on the stability of foundations. By Dr. V.I. Vaidhianathan and Hans Raj Luthra. Lahore. Printed by the Supt., Government printing, Punjab, 1936. 13 p. Punjab Irrigation Research Institute. Research Publication, v. 5, no. 5.

Heat Transmission.

Estimating sun heat through glass windows and skylights. Heating and Ventilating. v. 33, no. 5. May, 1936. p. 43-45. Outlines method whereby amount of sun heat can be estimated.

Estimating sun heat through walls and roofs. Heating and Ventilating. v. 33, no. 4. April, 1936. p. 37-41.

Houses.

How to have the home you want. U.S. Federal Housing Administration. Washington, 1936. 24 p.

Methods of housing finance in the United States and Abroad. By Virginia Turrell. Washington, D.C., Central Housing Committee, Sub-Committee on Research and Statistics, 1936. 5 p. multigraphed. Selected References on Housing no. 1.

Principles of planning small houses. Washington, D.C. Federal Housing Administration, 1936. 36 p. Technical Bulletin no. 4. Seeks to demonstrate, within limited scope of study, what is

Houses. (Cont'd)

presently possible, without resort to change in methods or materials, or other wide diversion from customary traditions in home building field. Results show that, accepting all of these limitations, it is still possible to produce substantial, sanitary, and comfortable type of shelter within means of families of very modest income.

Hydraulic Research.

Current hydraulic laboratory research. U.S. Department of Commerce. National Bureau of Standards. July 1, 1936. 109 p. multigraphed. Hydraulic Laboratory Bulletin. Series A. v. 4, no. 2.

Insect Control.

Death to insects. By Joe K. Ellsworth. Electricity on the Farm. v. 9, no. 8. August, 1936. p. 12-14.

Engineering phases of pink bollworm control. By D.A. Isler. Agricultural Engineering. v. 17, no. 8. August, 1936. p. 346-348. Engineering phases of present investigations for discovery of effective field control of pink bollworm consist of following: 1. Development of mechanical equipment for destruction of worms in crop remnants; 2. Determining value of plowing, irrigation, and other cultural practices as control measures.

Irrigation.

Irrigation methods vs drouth. Market Growers Journal. v. 59, no. 3. August 1, 1936. p. 318-321. Types of irrigation. Diagram of sub-irrigation system.

Measurement of irrigation water. U.S. Department of the Interior, Bureau of Reclamation. 4th edition. Washington, 1935. 51 p.

Movement of salt (alkali) in lettuce and other truck beds under cultivation. By W.T. McGeorge and M.F. Wharton. 1936. p. 391-438. Arizona Agricultural Experiment Station Bulletin no. 152.

Planning the use of our irrigation resources. By Frank Adams. Agricultural Engineering. v. 17, no. 8. August, 1936. p. 325-328. State activities in water planning. Cooperation between the federal and state governments needed. Nature of the planning needed. Planning on interstate streams. Summary of principles: 1. Since water is limiting element in agricultural development in western America, control of its use is key to land and water planning; 2. While in practice primary function of states in control of water has been to insure its economical use, and through orderly administrative procedure to make water rights certain and secure, they have additional function of protecting largest public interest in use of water resources; 3. Because of relative scarcity of water in West, federal government and states, within their respective or overlapping fields of jurisdiction, will be justified, as far as legally, financially,

Irrigation. (Cont'd)

and economically possible, in requiring that water be used in manner and in places that will most nearly result in best coordinated use when viewed from standpoint of economic and social values created; provided, that costs of following out plan are equitably assessed in accordance with accruing benefits, including assessment against federal or state or local governments of indirect and intangible benefits which are over and above benefits, whether direct or indirect or intangible, that accrue in main to those who use water, or to others whose interests are visibly and measurably enhanced thereby; 4. Economic consideration will result in water being used where it adds most largely to values; 5. Facts are the sine quo non of planning; 6. In field of irrigation resources there is need for larger measure of planning in case of small as well as large units than is now exercised, and the same basic principles will apply to one as to other; 7. Principles of land utilization as they are gradually being developed by specialists in that field give promise of lending great assistance in best planning of our irrigation resources, because of broad outlook these specialists are introducing into our consideration of those resources.

When measuring water. By W.E. Code. Western Farm Life. v. 38, no. 11. June 1, 1936. p. 6. Use a proved accurate device, properly installed and operated to make fair divisions.

Land Utilization.

Agricultural landlord-tenant relations in England and Wales. By Marshall Harris. Washington, D.C., 1936. 63 p. multigraphed. U.S. Resettlement Administration. Land-Use Planning Publication no. 4.

America's land. U.S. Resettlement Administration. Washington, D.C., 1936. 30 p.

Economic study of land utilization in Chemung County, New York. By T.E. LaMont. 1935. 84 p. Cornell University. Agricultural Experiment Station Bulletin no. 640.

Land settlement technique abroad: III. Selection of settlers in agricultural settlement in several European countries. By Erich Kraemer. Washington, D.C., 1936. 84 p. multigraphed. U.S. Resettlement Administration. Land-Use Planning Publication no. 5.

Regional planning: part II- St. Louis region. U.S. National Resources Committee. Washington, 1936. 68 p.

Regional planning: Part III, New England. U.S. National Resources Committee. Washington, D.C., 1936. 101 p.

Suggestions on training for rural land-use planning. Land Policy Circular. July, 1936. p. 6-24. Statement was prepared at suggestion of Social Science Research Council Committee on Social and Economic Research in Agriculture.

Land Utilization. (Cont'd).

Supplementary farming homesteads in recent German land settlement. By Erich Kraemer. Washington, D.C., 1936. 20 p. multigraphed. U.S. Resettlement Administration. Land-Use Planning Publication no. 3.

Lubrication.

Deep well pump lubrication. Lubrication. v. 22, no. 7. July, 1936. p. 81-84.

Relation of cost to economy. Lubrication. v. 22, no. 7. July, 1936. p. 73-81.

Miscellaneous.

Preparation and presentation of extension subject matter. By J.P. Fairbank. Agricultural Engineering. v. 17, no. 8. August, 1936. p. 331-332, 366. Paper may be summarized: 1. Select subject matter which is right and important; 2. Have more subject matter than will be presented; 3. Present subject matter so that it will be heard, seen and understood.

Report of the research and extension activities of the engineering schools and departments for the sessions of 1934-35. By A.A. Potter. 1935. 48 p. Purdue University. Engineering Experiment Station. Research Series no. 51.

Review of the American machinery industries. By R.E.W. Harrison and Charles O. Thompson. Washington, D.C., 1936. 55 p. Domestic Commerce Series no. 93.

Third annual report of the Farm Credit Administration, 1935. Washington, D.C., 1936. 200 p.

Mississippi River.

Influence of diversion on the Mississippi and Atchafalaya rivers: Discussion. By E.W. Lane. Proceedings of American Society of Civil Engineers. v. 62, no. 5. May, 1936. p. 764-772.

Mosquito Control.

Mosquito control engineering..... Ill, Control technique and organization. By Russell W. Gies. Engineering News-Record. v. 117, no. 7. August 13, 1936. p. 225-228. Nature and methods of practical mosquito control are a highly specialized type of operation predicated upon the application of scientific knowledge coupled with broad experience.

Power Development.

Nation's power supply. By Frank F. Fowle. Electrical World. v. 106, no. 25. June 20, 1936. p. 38-44. Analysis shows transmission of

Power Development. (Cont'd)

remote hydro power costlier than coal haul. Production costs are compared of modern steam plant at mine mouth and of hydro plant. Transmission of electrical energy is found to be more costly than hauling of equivalent coal, making it more economical, under conditions frequently encountered, to generate power near load from fuel than to supply it from distant water-power development. Construction by government of uneconomic and misplaced power developments is inexcusable waste of public money. Federal competition with private industry threatens to destroy their prosperity, promote unemployment and ultimately ruin thousands of innocent investors.

Norris Dam starts power generation. Power. v. 80, no. 8. August 1936. p. 427-429. First river-regulation and power project of T.V.A. a dam with a 3,400,000-acre ft. reservoir and 132,000-hp. power-generating capacity, started operation August first.

Twenty-eighth annual report of the Hydro-electric Power Commission of Ontario for the year ended October 31st, 1935. Toronto, Printed and published by T.E. Bowman, 1936. 527 p.

Pumps.

Successful irrigation depends on the pumping set-up. By Tudor Charles. Missouri Ruralist. v. 77, no. 14. July 11, 1936. p. 6.

Rainfall and Run-off.

Rainfall and runoff in Colorado. By M.C. Hinderlider. Engineering News-Record. v. 117, no. 7. August 13, 1936. p. 243-247. Unusual rainfall intensities and corresponding runoffs from drainage basins in eastern Colorado, within last three years, have been so greatly in excess of anything of record that special investigations have been undertaken, to accumulate data upon which to base designs for future proposed storage reservoirs in these and similarly affected areas. Areas covered by these studies, consist of Kiowa and Bijou, forming parts of basin of South Platte River, and of Republican and Arkansas rivers in northeastern Colorado, and Fountain, Horse and Granada creeks, tributaries of Arkansas River.

Rammed Earth.

Age-strength relationship for rammed earth. By R.L. Patty. Engineering News-Record. v. 117, no. 22. July 9, 1936. p. 44. Tests at South Dakota State College reveal an increase in strength of as much as 45 per cent in two years for the best soils which contain large per cent of sand.

Relation of colloids in soil to its favorable use in piso or rammed earth walls. By Ralph L. Patty. 1936. 23 p. South Dakota Agricultural Experiment Station. Bulletin no. 298.

Reclamation.

Federal reclamation projects. U.S. Bureau of Reclamation. Washington, 1935. 96 p.

Refrigerants.

Refrigerants - Their use and regulation. By Harry D. Edwards. Refrigerating Engineering. v. 31, no. 6. June, 1936. p. 356-361. Table 2. Properties of refrigerants.

Refrigeration.

Estimating evaporators and condensing units in the field. By George R. Lindahl. Refrigerating Engineering. v. 31, no. 6. June, 1936. p. 368, 374. Deals only with such food products as require average temperature of 35° F. and average relative humidity of 80% to be maintained in best condition as to color and flavor with minimum losses due to dehydration, trimmings, waste, etc.

Freon refrigeration equipment. By L.S. Morse. Power Plant Engineering. v. 40, no. 8. August, 1936. p. 487-488. Some of the characteristics that must be considered when using freon.

How cold should milk be? By John E. Nicholas. Electricity on the Farm. v. 9, no. 8. August, 1936. p. 20, 22. Table gives bacteria multiplication in milk for various temperatures.

Rate of cooling of fruits and vegetables in storage and transit. By Dean H. Rose. Refrigerating Engineering. v. 31, no. 6. June, 1936. p. 369-374.

Vacuum milk cooler. By John E. Nicholas. Refrigerating Engineering. v. 31, no. 6. June, 1936. p. 367, 375, 386. Authorized for publication as paper no. 730 in journal series of Pennsylvania agricultural experiment station.

Resettlement.

Possibilities of rural resettlement in Wisconsin. By W.A. Rowlands. Agricultural Engineering. v. 17, no. 6. June, 1936. p. 251-253. Rural zoning essential to a resettlement program. Resettlement of first concern to local government. Basic policies in resettlement. Demonstration unit farm prepared for resettlement of one family. Place of agricultural engineering in resettlement.

Rio Grande Valley.

Resources and opportunities of the middle Rio Grande Valley. Edited by Robert F. Kelcher. 1935. 54 p. University of New Mexico. Bulletin no. 264.

Silos.

Temporary silos. By K.B. Huff. 1936. 8 p. Missouri. Agricultural Extension Service. Circular no. 346.

Silos. (Cont'd)

Trench silo boosts livestock raising. By L.A. Higgins. Progressive Farmer. v. 51, no. 5. May, 1936. p. 32-33. What it is and how to dig one. Cross section of a trench silo shows good proportions in design, also method of covering over.

Silt.

Silting of reservoirs. By Henry M. Eakin. 1936. 142 p. U.S. Department of Agriculture. Technical Bulletin no. 524.

Soil Moisture.

Capillary conductivity measurements in peat soils. By L.A. Richards and B.D. Wilson. Journal of the American Society of Agronomy. v. 28, no. 6. June, 1936. p. 427-431. Apparatus of improved design was used in measuring capillary conductivity of water in peat soils. Description of apparatus is given. At low tensions soils were found to possess capillary conductivities greater than those that have been reported for mineral soils. However, capillary conductivity was found to become zero at lower tensions in two peat soils studied than has been reported for mineral soils. Difficulty was experienced in measuring capillary conductivity of peat soils because of length of time required for moisture content of soils to reach equilibrium value at given capillary tension.

Determining entrapped air in capillary soils. By B.G. Zimmerman. Engineering News-Record. v. 117, no. 6. August 6, 1936. p. 186-187. Device for measuring air not displaced by capillary water and effects of physical and chemical composition of soils on capillary rise.

Determining the percentage of moisture in soil samples without drying. By Edward E. Bauer. A.S.T.M. Bulletin. no. 81. July 31, 1936. p. 10-11, 13. Report of efforts made at University of Illinois to adapt procedure developed by Mr. W.M. Dunagan at Iowa State College for determination of constituents of freshly made concrete, to determination of the moisture content of soils. Paper explains briefly theory involved, describes equipment and test procedure used, and gives results of tests, including results of check tests of oven-dried samples.

Hold the water where it falls. Farm and Ranch. v. 55, no. 12. June 15, 1936. p. 4. Coleman county is pitching its program to insure adequate water supplies in droughty years, and money has been provided to build eight reservoirs well scattered over county.

More moisture storage possible with the basin lister. Implement and Tractor. v. 51, no. 16. August 8, 1936. p. 13. Gives close-up of reservoirs for water storage provided by basin lister at intervals of ten feet. These dams prevent run off of water and enable it to soak into subsoil.

Soil Moisture. (Cont'd)

Tensiometers for measuring the capillary tension of soil water.

By L. A. Richards and Willard Gardner. Journal of the American Society of Agronomy. v. 28, no. 5. May, 1936. p. 352-358. Principles underlying use of indicating, recording, and differential tensiometers are discussed and apparatus used is described.

Soil Sterilization.

Inexpensive soil sterilizer. By Morris H. Lloyd. Electricity on the Farm. v. 9, no. 1. January, 1936. p. 18. Design of sterilizer finally worked out was a box 36" x 16" x 16" in inside dimensions, made of tongue and groove boards one inch thick. It is supported on legs made of 4" x 4" stock. To make unloading of sterilizer easy, bottom is hinged on one side and fitted with hocks on opposite side. This sterilizer holds five and one-third cubic feet of soil, or about four bushels. Heaters are four in number, running lengthwise of box, and are eight inches apart. Each is rated at 350 watts, 115 volts. These heaters consist of 3/4-inch galvanized pipe filled with porcelain tubes placed end to end, with coiled heating wire stretched through tubes and secured at each end to suitable terminal bushings. By the use of such rugged, waterproof heaters no electricity passes through soil, all sterilization being accomplished by heat alone.

Spray Removal.

Spray residue on apples. By R.H. Robinson. Industrial and Engineering Chemistry. v. 28, no. 4. April, 1936. p. 455-457. Heavily sprayed waxy apples that cannot be cleaned by usual hydrochloric acid or sodium silicate solvent treatment may be washed effectively in acid supplemented with petroleum oil. Wetting or degumming agents properly used in combination with hydrochloric acid increase solvent action of acid on spray residue.

Standardization.

Relationship of some modern chemical engineering developments to the work of A.S.T.M. By H.C. Parmelee. A.S.T.M. Bulletin no. 81. July 31, 1936. p. 7-9, 13. Subject divided into (1) cellulose derivatives, (2) synthetic resins, and (3) rubber derivatives and rubber-like compounds.

Storage:

Closets and other storage arrangements for the farm home. By Maud M. Wilson. Washington, D.C., 1934. 40 p. multigraphed. Plans developed in connection with the Farm Housing Survey made in the spring of 1934 by the United States Department of Agriculture with funds provided by the Civil Works Administration.

Surveying.

First and second order triangulation in California (1927 datum) By Hugh C. Mitchell. Washington, D.C., 1936. 548 p. U.S. Coast and Geodetic Survey. Special Publication no. 202.

Tires.

Spring, tire and shock absorber testing development. By S. Ward Widney. S.A.E. Journal. v. 38, no. 3. March, 1936. p. 99-116. Shows just what happens to three units of suspension - tires, springs and shock absorbers on various vehicles, passenger cars, light, medium and heavy trucks, buses and taxi cabs. Shows that suspension directly influences all maintenance costs, depreciation and accidents, as well as comfort, and that springs, tires and shock absorbers when new, vary as much as 60 per cent in their effectiveness on different vehicles. Also that these three units depreciate in their effectiveness as a whole or separately, as much as 60 per cent, after given period of service.

"Water" tires now: editorial. Farm Implement News. v. 57, no. 17. August 13, 1936. p. 22. Procedure is to utilize special filler valve on tire and then fill partially with water and add enough air to develop required pressure. Object is to add needed weight for traction without having to use cast iron wheel weights.

Tractors.

Cooperative tractor catalog. 21st annual edition. Kansas City, Mo. Implement & Tractor, 1936. 260 p. Illustrated directory of tractors, tractor accessories and power farming machinery.

Oliver "standardizes" and "orchardizes" the new "70" tractor. Farm Implement News. v. 57, no. 17. August 13, 1936. p. 24-25.

Tung Oil.

Tung oil: the situation in world markets and economic and commercial factors in the development of a domestic tung oil industry in the United States. By C.C. Concannon. Washington, U.S. Bureau of Foreign and Domestic Commerce, 1936. 16 p.

Water, Underground.

Artificial groundwater. By D.A. Lane. Engineering News-Record. v. 116, no. 22. May 28, 1936. p. 779-780. Shallow basins covering 183 acres of gravel area are periodically spread with surplus water to replenish groundwater furnishing part of Los Angeles supply.

Water in the ground. By Chester Andrews. Capper's Farmer. v. 47, no. 3. March, 1936. p. 11, 36. Old 3-row lister was foundation of machine. Shanks were 40 inches apart. Removed moldboards,

Water, Underground (Cont'd)

inserted extra shanks midway between original ones and attached shovels or chisels to shanks. Thus furrows are made every 20 inches instead of 40 inches apart as in case of ordinary lister. Uses machine with damming attachment. Rows are run north and south, or with direction of prevailing winds.

Water Supply.

Colorado water puzzle still unsolved. By Charles A. Lory. Western Farm Life. v. 38, no. 12. June 15, 1936. p. 3, 23. Irrigation has been state's paramount problem since pioneer days. Comprehensive survey of feasibility of bringing water from Colorado near Grand Lake to Big Thompson and distribute, thence to lands of Poudre, Big and Little Thompson, St. Vrain and South Platte is under way, and funds have been allotted for surveying feasibility of transmountain diversion from Blue to headwaters of South Platte. Survey has been authorized to study feasibility of bringing water from San Juan to Rio Grande in San Luis Valley. These transmountain diversions are looked upon with apprehension by Western Slope water users and by water users on lower Colorado. However, right of diversion from one watershed to another has long been established. Transmountain diversion offers only possibility for supplemental supplies to over-appropriated streams on Eastern Slope, for saving highly developed area irrigated from these streams and for making at least partial use of Colorado's share of 10,000,000 acre-feet of water which now flows out of state from Colorado river basin. Preliminary surveys indicate that these transmountain diversions can be made without damage to established rights and without damaging or curtailing development of non-irrigated lands still susceptible of irrigation on Western Slope in Colorado.

Control of water as applied to irrigation, power and town water supply purposes. By Philip A. Morley Parker. 2d edition. London, George Routledge & sons, ltd., 1932. 1055 p.

Drainage basin water resources study undertaken. Land Policy Circular. July, 1936. p. 1-2. Water Resources Committee of National Resources Committee will report its findings to President in December of this year. Objectives of study are listed as follows: (1) to provide sound, nation-wide outline of feasible plans for securing greatest beneficial use of water resources of each of 11 major drainage basins in the United States; (2) to furnish various Federal, State, and local agencies clear statement of dominant physical and economic considerations affecting development of water resources in each basin; (3) to establish as far as possible major ultimate aims and limits of development, and work consistent therewith, which can now be undertaken; (4) to provide for program of investigation which will permit continuous check, revision, and improvement of plan outlined.

Water Supply. (Cont'd)

Long versus short body fittings for water supply. Part I, Loss of head caused by bends, tees, and crosses, by Ernest W. Schoder and Arthur N. Vanderlip. Part II. Economic comparison, by Allen T. Ricketts and Thomas H. Wiggin. 1935. 102 p. Cornell University. Engineering Experiment Station. Bulletin no. 20.

Water Supply, Rural

Folks get water from faucets. By Andrew Appleby. Electricity on the Farm. v. 9, no. 8. August, 1936. p. 7-9.

Soft water for the farm home. By E.W. Lehmann. Electricity on the Farm. v. 8, no. 11. November, 1935. p. 9-10. Gives diagram of water softener and filter.

Water supplies on farms for fire department use. By Harry E. Roethe. Agricultural Engineering. v. 17, no. 8. August, 1936. p. 349, 368.

Weirs.

Design of Khanki Weir Bay VIII. By J.P. Gunn and Harbans Lal Uppal. Lahore, Printed by the Supt., Government printing, Punjab, 1936. 2 p. Punjab Irrigation Research Institute. Research Publication, v. 2, no. 12.

On the electrical method of investigating the uplift pressures under dams and weirs. By Dr. V.I. Vaidhianathan and Gurdas Ram. Lahore, Printed by the Supt., Government printing, Punjab, 1936. 5 p. Punjab Irrigation Research Institute. Research Publication v. 5, no. 4.

Pressures under a model of Panjnad Weir and under the prototype. By Harbans Lal Uppal. Lahore, Printed by the Supt., Government printing, Punjab, 1936. 6 p. Punjab Irrigation Research Institute. Research Publication, v. 2, no. 11.

Windmills.

Power from the wind. By Fred W. Hawthorn. Nebraska Farmer. v. 78, no. 16. August 1, 1936. p. 7, 18. 6-mile breeze generates current.

World Power Conference.

Third World Power Conference. Science. v. 83, no. 2165. June 26, 1936. p. 615-616. Purposes of conference are to examine part played by power in all technical, economic, social and public bearings; to provide a forum for interchange of data and ideas; to dramatize role of power in modern world.

